

SEQUENCE LISTING

<110> CHUGAI SEIYAKU KABUSHIKI KAISHA

<120> Therapeutic agent for treating hypercalcemia crisis

<130> PH-652-PCT

<150> JP98/180143

<151> 1998-06-26

<160> 75

<170> PatentIn Ver. 2.0

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38

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39

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<211> 35

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tgttgaattc agatctaact acttacctag gacagtgacc ttggcicc

48

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gacac                                     125
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<400> 27

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<211> 30

<212> DNA

<213> Artificial Sequence

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<223> Synthetic DNA

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<210> 29

<211> 133

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<213> Artificial Sequence

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<223> Synthetic DNA

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<212> DNA

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tgatgccatt caatgggtga cgtactgtgc tgactactca aggtgcaggt gagcttgacc 120
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<211> 19

<212> DNA

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<223> Synthetic DNA

<400> 34

cttggatccg ggctgacct 19

<210> 35

<211> 75

<212> DNA

<213> Artificial Sequence

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<400> 35

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ttgttcctta attgt 75

<210> 36

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<212> DNA

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<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic DNA

<400> 37

acaaagctta gcgctacctc accatctcca gcctccagcc tgagga

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<210> 38

<211> 111

<212> DNA

<213> Artificial Sequence

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<210> 39

<211> 42

<212> DNA

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<223> Synthetic DNA

<400> 39

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42

<210> 40

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic DNA

<400> 40

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<210> 41

<211> 35

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic DNA

<400> 41

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35

<210> 42

<211> 35

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic DNA

<400> 42

cacgaattca ctatcgattc tggaaccttc agagg

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<210> 43

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic DNA

<400> 43

ggcttggagc tcctcaga

18

<210> 44

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic DNA

<400> 44

gacagtgggtt caaagttttt

20

<210> 45

<211> 118

<212> PRT

<213> Mus musculus

<400> 45

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Ser	Ala	Lys	Leu	Thr	Cys	Thr	Leu	Ser	Ser	Gln	His	Ser	Thr	Tyr	Thr
			20					25					30		
Ile	Glu	Trp	Tyr	Gln	Gln	Gln	Pro	Leu	Lys	Pro	Pro	Lys	Tyr	Val	Met
		35					40					45			
Asp	Leu	Lys	Gln	Asp	Gly	Ser	His	Ser	Thr	Gly	Asp	Gly	Ile	Pro	Asp
	50					55						60			
Arg	Phe	Ser	Gly	Ser	Ser	Ser	Gly	Ala	Asp	Arg	Tyr	Leu	Ser	Ile	Ser
65					70					75				80	
Asn	Ile	Gln	Pro	Glu	Asp	Glu	Ala	Met	Tyr	Ile	Cys	Gly	Val	Gly	Asp
				85					90					95	
Thr	Ile	Lys	Glu	Gln	Phe	Val	Tyr	Val	Phe	Gly	Gly	Gly	Thr	Lys	Val
			100					105						110	
Thr	Val	Leu	Gly	Gln	Pro										
															115

<210> 46

<211> 118

<212> PRT

<213> Mus musculus

<400> 46

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Ser	Leu	Lys	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Ser	Ser	Tyr
			20						25					30	

Gly Met Ser Trp Ile Arg Gln Thr Pro Asp Lys Arg Leu Glu Trp Val
 35 40 45
 Ala Thr Ile Ser Ser Gly Gly Ser Tyr Thr Tyr Tyr Pro Asp Ser Val
 50 55 60
 Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Thr Leu Tyr
 65 70 75 80
 Leu Gln Met Ser Ser Leu Lys Ser Glu Asp Thr Ala Met Phe Tyr Cys
 85 90 95
 Ala Arg Gln Thr Thr Met Thr Tyr Phe Ala Tyr Trp Gly Gln Gly Thr
 100 105 110
 Leu Val Thr Val Ser Ala
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<210> 47

<211> 116

<212> PRT

<213> Homo sapiens

<400> 47

Gln Leu Val Leu Thr Gln Ser Pro Ser Ala Ser Ala Ser Leu Gly Ala
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 20 25 30
 Ile Glu Trp His Gln Gln Gln Pro Glu Lys Gly Pro Arg Tyr Leu Met
 35 40 45
 Lys Leu Lys Gln Asp Gly Ser His Ser Thr Gly Asp Gly Ile Pro Asp
 50 55 60
 Arg Phe Ser Gly Ser Ser Ser Gly Ala Glu Arg Tyr Leu Thr Ile Ser
 65 70 75 80

Ser Leu Gln Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Gly Val Gly Asp
 85 90 95
 Thr Ile Lys Glu Gln Phe Val Tyr Val Phe Gly Gly Gly Thr Lys Leu
 100 105 110
 Thr Val Leu Gly
 115

<210> 48

<211> 118

<212> PRT

<213> Homo sapiens

<400> 48

Gln Leu Val Leu Thr Gln Ser Pro Ser Ala Ser Ala Ser Leu Gly Ala
 1 5 10 15
 Ser Val Lys Leu Thr Cys Thr Leu Ser Ser Gln His Ser Thr Tyr Thr
 20 25 30
 Ile Glu Trp Tyr Gln Gln Gln Pro Glu Lys Gly Pro Lys Tyr Leu Met
 35 40 45
 Asp Leu Lys Gln Asp Gly Ser His Ser Thr Gly Asp Gly Ile Pro Asp
 50 55 60
 Arg Phe Ser Gly Ser Ser Ser Gly Ala Glu Arg Tyr Leu Thr Ile Ser
 65 70 75 80
 Ser Leu Gln Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Gly Val Gly Asp
 85 90 95
 Thr Ile Lys Glu Gln Phe Val Tyr Val Phe Gly Gly Gly Thr Lys Leu
 100 105 110
 Thr Val Leu Gly Gln Pro

115

<210> 49

<211> 118

<212> PRT

<213> Homo sapiens

<400> 49

Gln Leu Val Leu Thr Gln Ser Pro Ser Ala Ser Ala Ser Leu Gly Ala
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Ser Val Lys Leu Thr Cys Thr Leu Ser Ser Gln His Ser Thr Tyr Thr
20 25 30
Ile Glu Trp Tyr Gln Gln Gln Pro Glu Lys Gly Pro Lys Tyr Val Met
35 40 45
Asp Leu Lys Gln Asp Gly Ser His Ser Thr Gly Asp Gly Ile Pro Asp
50 55 60
Arg Phe Ser Gly Ser Ser Ser Gly Ala Glu Arg Tyr Leu Thr Ile Ser
65 70 75 80
Ser Leu Gln Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Gly Val Gly Asp
85 90 95
Thr Ile Lys Glu Gln Phe Val Tyr Val Phe Gly Gly Gly Thr Lys Leu
100 105 110
Thr Val Leu Gly Gln Pro
115

<210> 50

<211> 118

<212> PRT

<213> Homo sapiens

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Ser	Val	Lys	Leu	Thr	Cys	Thr	Leu	Ser	Ser	Gln	His	Ser	Thr	Tyr	Thr
			20					25					30		
Ile	Glu	Trp	Tyr	Gln	Gln	Gln	Pro	Glu	Lys	Gly	Pro	Arg	Tyr	Leu	Met
		35					40					45			
Asp	Leu	Lys	Gln	Asp	Gly	Ser	His	Ser	Thr	Gly	Asp	Gly	Ile	Pro	Asp
	50					55						60			
Arg	Phe	Ser	Gly	Ser	Ser	Ser	Gly	Ala	Glu	Arg	Tyr	Leu	Thr	Ile	Ser
65					70					75				80	
Ser	Leu	Gln	Ser	Glu	Asp	Glu	Ala	Asp	Tyr	Tyr	Cys	Gly	Val	Gly	Asp
				85					90					95	
Thr	Ile	Lys	Glu	Gln	Phe	Val	Tyr	Val	Phe	Gly	Gly	Gly	Thr	Lys	Leu
		100						105						110	
Thr	Val	Leu	Gly	Gln	Pro										
		115													

<210> 51

<211> 118

<212> PRT

<213> Homo sapiens

<400> 51

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Ser	Val	Lys	Leu	Thr	Cys	Thr	Leu	Ser	Ser	Gln	His	Ser	Thr	Tyr	Thr
			20					25					30		

Ser Leu Gln Ser Glu Asp Glu Ala Asp Tyr Ile Cys Gly Val Gly Asp
 85 90 95
 Thr Ile Lys Glu Gln Phe Val Tyr Val Phe Gly Gly Gly Thr Lys Leu
 100 105 110
 Thr Val Leu Gly Gln Pro
 115

<210> 53

<211> 118

<212> PRT

<213> Homo sapiens

<400> 53

Gln Leu Val Leu Thr Gln Ser Pro Ser Ala Ser Ala Ser Leu Gly Ala
 1 5 10 15
 Ser Val Lys Leu Thr Cys Thr Leu Ser Ser Gln His Ser Thr Tyr Thr
 20 25 30
 Ile Glu Trp Tyr Gln Gln Gln Pro Glu Lys Gly Pro Arg Tyr Leu Met
 35 40 45
 Asp Leu Lys Gln Asp Gly Ser His Ser Thr Gly Asp Gly Ile Pro Asp
 50 55 60
 Arg Phe Ser Gly Ser Ser Ser Gly Ala Glu Arg Tyr Leu Thr Ile Ser
 65 70 75 80
 Ser Leu Gln Ser Glu Asp Glu Ala Asp Tyr Ile Cys Gly Val Gly Asp
 85 90 95
 Thr Ile Lys Glu Gln Phe Val Tyr Val Phe Gly Gly Gly Thr Lys Leu
 100 105 110
 Thr Val Leu Gly Gln Pro
 115

<210> 54

<211> 118

<212> PRT

<213> Homo sapiens

<400> 54

Gln Leu Val Leu Thr Gln Ser Pro Ser Ala Ser Ala Ser Leu Gly Ala
1 5 10 15
Ser Val Lys Leu Thr Cys Thr Leu Ser Ser Gln His Ser Thr Tyr Thr
20 25 30
Ile Glu Trp Tyr Gln Gln Gln Pro Glu Lys Gly Pro Lys Tyr Val Met
35 40 45
Asp Leu Lys Gln Asp Gly Ser His Ser Thr Gly Asp Gly Ile Pro Asp
50 55 60
Arg Phe Ser Gly Ser Ser Ser Gly Ala Glu Arg Tyr Leu Thr Ile Ser
65 70 75 80
Ser Leu Gln Ser Glu Asp Glu Ala Asp Tyr Ile Cys Gly Val Gly Asp
85 90 95
Thr Ile Lys Glu Gln Phe Val Tyr Val Phe Gly Gly Gly Thr Lys Leu
100 105 110
Thr Val Leu Gly Gln Pro
115

<210> 55

<211> 118

<212> PRT

<213> Homo sapiens

<400> 55

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Ser	Val	Lys	Leu	Thr	Cys	Thr	Leu	Ser	Ser	Gln	His	Ser	Thr	Tyr	Thr
			20					25					30		
Ile	Glu	Trp	Tyr	Gln	Gln	Gln	Pro	Glu	Lys	Gly	Pro	Arg	Tyr	Val	Met
		35					40					45			
Asp	Leu	Lys	Gln	Asp	Gly	Ser	His	Ser	Thr	Gly	Asp	Gly	Ile	Pro	Asp
	50					55						60			
Arg	Phe	Ser	Gly	Ser	Ser	Ser	Gly	Ala	Glu	Arg	Tyr	Leu	Thr	Ile	Ser
65					70					75				80	
Ser	Leu	Gln	Ser	Glu	Asp	Glu	Ala	Asp	Tyr	Ile	Cys	Gly	Val	Gly	Asp
				85					90					95	
Thr	Ile	Lys	Glu	Gln	Phe	Val	Tyr	Val	Phe	Gly	Gly	Gly	Thr	Lys	Leu
		100						105					110		
Thr	Val	Leu	Gly	Gln	Pro										
		115													

<210> 56

<211> 118

<212> PRT

<213> Homo sapiens

<400> 56

Gln	Val	Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Val	Val	Gln	Pro	Gly	Arg
1				5					10					15	
Ser	Leu	Arg	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Ser	Ser	Tyr
			20						25				30		
Gly	Met	Ser	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val

35	40	45
Ala Thr Ile Ser Ser Gly Gly Ser Tyr Thr Tyr Tyr Pro Asp Ser Val		
50	55	60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr		
65	70	75
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys		
85	90	95
Ala Arg Gln Thr Thr Met Thr Tyr Phe Ala Tyr Trp Gly Gln Gly Thr		
100	105	110
Leu Val Thr Val Ser Ser		
115		

<210> 57

<211> 411

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1).. (411)

<220>

<221> mat_peptide

<222> (58).. (411)

<400> 57

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-15

-10

-5

gtc cag tgt gag gtg caa ctg gtg gag tct ggg gga gac tta gtg aag	96
Val Gln Cys Glu Val Gln Leu Val Glu Ser Gly Gly Asp Leu Val Lys	
-1 1 5 10	
cct gga ggg tcc ctg aaa ctc tcc tgt gca gcc tct gga ttc act ttc	144
Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe	
15 20 25	
agt agc tat ggc atg tct tgg att cgc cag act cca gac aag agg ctg	192
Ser Ser Tyr Gly Met Ser Trp Ile Arg Gln Thr Pro Asp Lys Arg Leu	
30 35 40 45	
gag tgg gtc gca acc att agt agt ggt ggt agt tac acc tac tat cca	240
Glu Trp Val Ala Thr Ile Ser Ser Gly Gly Ser Tyr Thr Tyr Tyr Pro	
50 55 60	
gac agt gtg aag ggg cga ttc acc atc tcc aga gac aat gcc aag aac	288
Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn	
65 70 75	
acc cta tac ctg caa atg agc agt ctg aag tct gag gac aca gcc atg	336
Thr Leu Tyr Leu Gln Met Ser Ser Leu Lys Ser Glu Asp Thr Ala Met	
80 85 90	
ttt tac tgt gca aga cag act act atg act tac ttt gct tac tgg ggc	384
Phe Tyr Cys Ala Arg Gln Thr Thr Met Thr Tyr Phe Ala Tyr Trp Gly	
95 100 105	
caa ggg act ctg gtc act gtc tct gca	411
Gln Gly Thr Leu Val Thr Val Ser Ala	
110 115	

<210> 58

<211> 411

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1).. (411)

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<222> (58).. (411)

<400> 58

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-15 -10 -5	
gtc cag tgt cag gtg cag ctg gtg gag tct ggg gga ggc gtg gtc cag	96
Val Gln Cys Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln	
-1 1 5 10	
cct ggg agg tcc ctg aga ctc tcc tgt gca gcc tct gga ttc acc ttc	144
Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe	
15 20 25	
agt agc tat ggc atg tct tgg gtc cgc cag gct cca ggc aag ggg ctg	192
Ser Ser Tyr Gly Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu	
30 35 40 45	
gag tgg gtg gca acc att agt agt ggt ggt agt tac acc tac tat cca	240
Glu Trp Val Ala Thr Ile Ser Ser Gly Gly Ser Tyr Thr Tyr Tyr Pro	
50 55 60	
gac agt gtg aag ggg cga ttc acc atc tcc aga gac aat tcc aag aac	288
Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn	
65 70 75	
acg ctg tat ctg caa atg aac agc ctg aga gct gag gac acg gct gtg	336

Thr	Leu	Tyr	Leu	Gln	Met	Asn	Ser	Leu	Arg	Ala	Glu	Asp	Thr	Ala	Val		
			80				85					90					
tat	tac	tgt	gcg	aga	cag	act	act	atg	act	tac	ttt	gct	tac	tgg	ggc	384	
Tyr	Tyr	Cys	Ala	Arg	Gln	Thr	Thr	Met	Thr	Tyr	Phe	Ala	Tyr	Trp	Gly		
		95				100					105						
cag	gga	acc	ctg	gtc	acc	gtc	tcc	tca								411	
Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser									
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<210> 59

<211> 11

<212> PRT

<213> Homo sapiens

<400> 59

Lys	Ala	Ser	Gln	Asp	Val	Asn	Thr	Ala	Val	Ala
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<211> 7

<212> PRT

<213> Homo sapiens

<400> 60

Ser	Ala	Ser	Asn	Arg	Tyr	Thr
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<210> 61

<211> 9

<212> PRT

<213> Homo sapiens

<400> 61

Gln Gln His Tyr Ser Thr Pro Phe Thr

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5

<210> 62

<211> 5

<212> PRT

<213> Homo sapiens

<400> 62

Pro Tyr Trp Met Gln

1

5

<210> 63

<211> 16

<212> PRT

<213> Homo sapiens

<400> 63

Ser Ile Phe Gly Asp Gly Asp Thr Arg Tyr Ser Gln Lys Phe Lys Gly

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5

10

15

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<211> 11

<212> PRT

<213> Homo sapiens

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Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr

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<210> 65

<211> 411

<212> DNA

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<220>

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<222> (1).. (411)

<220>

<221> mat_peptide

<222> (58).. (411)

<400> 65

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          -15          -10          -5
tct ttc tcc caa ctt gtg ctc act cag tca tct tca gcc tct ttc tcc 96
Ser Phe Ser Gln Leu Val Leu Thr Gln Ser Ser Ser Ala Ser Phe Ser
          -1  1          5          10
ctg gga gcc tca gca aaa ctc acg tgc acc ttg agt agt cag cac agt 144
Leu Gly Ala Ser Ala Lys Leu Thr Cys Thr Leu Ser Ser Gln His Ser
          15          20          25
acg tac acc att gaa tgg tat cag caa cag cca ctc aag cct cct aag 192
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Thr	Tyr	Thr	Ile	Glu	Trp	Tyr	Gln	Gln	Gln	Pro	Leu	Lys	Pro	Pro	Lys		
30						35				40					45		
tat	gtg	atg	gat	ctt	aag	caa	gat	gga	agc	cac	agc	aca	ggg	gat	ggg	240	
Tyr	Val	Met	Asp	Leu	Lys	Gln	Asp	Gly	Ser	His	Ser	Thr	Gly	Asp	Gly		
				50					55					60			
att	cct	gat	cgc	ttc	tct	gga	tcc	agc	tct	ggg	gct	gat	cgc	tac	ctt	288	
Ile	Pro	Asp	Arg	Phe	Ser	Gly	Ser	Ser	Ser	Gly	Ala	Asp	Arg	Tyr	Leu		
				65				70					75				
agc	att	tcc	aac	atc	cag	cca	gaa	gat	gaa	gca	atg	tac	atc	tgt	ggg	336	
Ser	Ile	Ser	Asn	Ile	Gln	Pro	Glu	Asp	Glu	Ala	Met	Tyr	Ile	Cys	Gly		
		80				85						90					
gtg	ggg	gat	aca	att	aag	gaa	caa	ttt	gtg	tat	gtt	ttc	ggc	ggg	ggg	384	
Val	Gly	Asp	Thr	Ile	Lys	Glu	Gln	Phe	Val	Tyr	Val	Phe	Gly	Gly	Gly		
		95				100					105						
acc	aag	gtc	act	gtc	cta	ggg	cag	ccc								411	
Thr	Lys	Val	Thr	Val	Leu	Gly	Gln	Pro									
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<210> 66

<211> 411

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<222> (58).. (411)

<400> 66

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tct ttc tcc cag ctt gtg ctg act caa tgc ccc tct gcc tct gcc tcc	96
Ser Phe Ser Gln Leu Val Leu Thr Gln Ser Pro Ser Ala Ser Ala Ser	
-1 1 5 10	
ctg gga gcc tgc gtc aag ctc acc tgc acc ttg agt agt cag cac agt	144
Leu Gly Ala Ser Val Lys Leu Thr Cys Thr Leu Ser Ser Gln His Ser	
15 20 25	
acg tac acc att gaa tgg cat cag cag cag cca gag aag ggc cct cgg	192
Thr Tyr Thr Ile Glu Trp His Gln Gln Gln Pro Glu Lys Gly Pro Arg	
30 35 40 45	
tac ttg atg aaa ctt aag caa gat gga agc cac agc aca ggt gat ggg	240
Tyr Leu Met Lys Leu Lys Gln Asp Gly Ser His Ser Thr Gly Asp Gly	
50 55 60	
att cct gat cgc ttc tca ggc tcc agc tct ggg gct gag cgc tac ctc	288
Ile Pro Asp Arg Phe Ser Gly Ser Ser Ser Gly Ala Glu Arg Tyr Leu	
65 70 75	
acc atc tcc agc ctc cag tct gag gat gag gct gac tat tac tgt ggt	336
Thr Ile Ser Ser Leu Gln Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Gly	
80 85 90	
gtg ggt gat aca att aag gaa caa ttt gtg tac gtg ttc ggc gga ggg	384
Val Gly Asp Thr Ile Lys Glu Gln Phe Val Tyr Val Phe Gly Gly Gly	
95 100 105	
acc aaa ctg acc gtc cta ggt cag ccc	411
Thr Lys Leu Thr Val Leu Gly Gln Pro	

110

115

<210> 67

$\langle 211 \rangle$ 411

<212> DNA

⟨213⟩ Homo sapiens

 $\langle 220 \rangle$

$\langle 221 \rangle$ CDS

 $\langle 222 \rangle$ (1) . . (411) $\langle 220 \rangle$

<221> mat_peptide

 $\langle 222 \rangle$ (58) .. (411)

<400> 67

atg gcc tgg act cct ctc ttc ttc ttc ttt gtt ctt cat tgc tca ggt	48
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tct ttc tcc cag ctt gtg ctg act caa tgc ccc tct gcc tct gcc tcc	96
Ser Phe Ser Gln Leu Val Leu Thr Gln Ser Pro Ser Ala Ser Ala Ser	
-1 1 5 10	
ctg gga gcc tgc gtc aag ctc acc tgc acc ttg agt agt cag cac agt	144
Leu Gly Ala Ser Val Lys Leu Thr Cys Thr Leu Ser Ser Gln His Ser	
15 20 25	
acg tac acc att gaa tgg tat cag cag cag cca gag aag ggc cct aag	192
Thr Tyr Thr Ile Glu Trp Tyr Gln Gln Gln Pro Glu Lys Gly Pro Lys	
30 35 40 45	
tac ctg atg gat ctt aag caa gat gga agc cac agc aca ggt gat ggg	240

Tyr	Leu	Met	Asp	Leu	Lys	Gln	Asp	Gly	Ser	His	Ser	Thr	Gly	Asp	Gly		
				50					55					60			
att	cct	gat	cgc	ttc	tca	ggc	tcc	agc	tct	ggg	gct	gag	cgc	tac	ctc	288	
Ile	Pro	Asp	Arg	Phe	Ser	Gly	Ser	Ser	Ser	Gly	Ala	Glu	Arg	Tyr	Leu		
				65					70					75			
acc	atc	tcc	agc	ctc	cag	tct	gag	gat	gag	gct	gac	tat	tac	tgt	ggt	336	
Thr	Ile	Ser	Ser	Leu	Gln	Ser	Glu	Asp	Glu	Ala	Asp	Tyr	Tyr	Cys	Gly		
				80					85					90			
gtg	ggt	gat	aca	att	aag	gaa	caa	ttt	gtg	tac	gtg	ttc	ggc	gga	ggg	384	
Val	Gly	Asp	Thr	Ile	Lys	Glu	Gln	Phe	Val	Tyr	Val	Phe	Gly	Gly	Gly		
				95					100					105			
acc	aaa	ctg	acc	gtc	cta	ggc	cag	ccc								411	
Thr	Lys	Leu	Thr	Val	Leu	Gly	Gln	Pro									
110						115											

<210> 68

<211> 411

<212> DNA

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<220>

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<222> (1).. (411)

<220>

<221> mat_peptide

<222> (58).. (411)

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tct ttc tcc cag ctt gtg ctg act caa tgc ccc tct gcc tct gcc tcc	96
Ser Phe Ser Gln Leu Val Leu Thr Gln Ser Pro Ser Ala Ser Ala Ser	
-1 1 5 10	
ctg gga gcc tgc gtc aag ctc acc tgc acc ttg agt agt cag cac agt	144
Leu Gly Ala Ser Val Lys Leu Thr Cys Thr Leu Ser Ser Gln His Ser	
15 20 25	
acg tac acc att gaa tgg tat cag cag cag cca gag aag ggc cct aag	192
Thr Tyr Thr Ile Glu Trp Tyr Gln Gln Gln Pro Glu Lys Gly Pro Lys	
30 35 40 45	
tac gtg atg gat ctt aag caa gat gga agc cac agc aca ggt gat ggg	240
Tyr Val Met Asp Leu Lys Gln Asp Gly Ser His Ser Thr Gly Asp Gly	
50 55 60	
att cct gat cgc ttc tca ggc tcc agc tct ggg gct gag cgc tac ctc	288
Ile Pro Asp Arg Phe Ser Gly Ser Ser Ser Gly Ala Glu Arg Tyr Leu	
65 70 75	
acc atc tcc agc ctc cag tct gag gat gag gct gac tat tac tgt ggt	336
Thr Ile Ser Ser Leu Gln Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Gly	
80 85 90	
gtg ggt gat aca att aag gaa caa ttt gtg tac gtg ttc ggc gga ggg	384
Val Gly Asp Thr Ile Lys Glu Gln Phe Val Tyr Val Phe Gly Gly Gly	
95 100 105	
acc aaa ctg acc gtc cta ggc cag ccc	411
Thr Lys Leu Thr Val Leu Gly Gln Pro	
110 115	

<210> 69

<211> 411

<212> DNA

<213> Homo sapiens

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<220>

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<222> (58).. (411)

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tct ttc tcc cag ctt gtg ctg act caa tcg ccc tct gcc tct gcc tcc 96
Ser Phe Ser Gln Leu Val Leu Thr Gln Ser Pro Ser Ala Ser Ala Ser
      -1  1              5              10
ctg gga gcc tcg gtc aag ctc acc tgc acc ttg agt agt cag cac agt 144
Leu Gly Ala Ser Val Lys Leu Thr Cys Thr Leu Ser Ser Gln His Ser
      15              20              25
acg tac acc att gaa tgg tat cag cag cag cca gag aag ggc cct agg 192
Thr Tyr Thr Ile Glu Trp Tyr Gln Gln Gln Pro Glu Lys Gly Pro Arg
      30              35              40              45
tac ctg atg gat ctt aag caa gat gga agc cac agc aca ggt gat ggg 240
Tyr Leu Met Asp Leu Lys Gln Asp Gly Ser His Ser Thr Gly Asp Gly
      50              55              60
att cct gat cgc ttc tca ggc tcc agc tct ggg gct gag cgc tac ctc 288
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Ile	Pro	Asp	Arg	Phe	Ser	Gly	Ser	Ser	Ser	Gly	Ala	Glu	Arg	Tyr	Leu	
			65					70					75			
acc	atc	tcc	agc	ctc	cag	tct	gag	gat	gag	gct	gac	tat	tac	tgt	ggt	336
Thr	Ile	Ser	Ser	Leu	Gln	Ser	Glu	Asp	Glu	Ala	Asp	Tyr	Tyr	Cys	Gly	
			80					85					90			
gtg	ggt	gat	aca	att	aag	gaa	caa	ttt	gtg	tac	gtg	ttc	ggc	gga	ggg	384
Val	Gly	Asp	Thr	Ile	Lys	Glu	Gln	Phe	Val	Tyr	Val	Phe	Gly	Gly	Gly	
			95					100					105			
acc	aaa	ctg	acc	gtc	cta	ggc	cag	ccc								411
Thr	Lys	Leu	Thr	Val	Leu	Gly	Gln	Pro								
110								115								

<210> 70

 $\langle 211 \rangle$ 411

<212> DNA

<213> Homo sapiens

 $\langle 220 \rangle$

$\langle 221 \rangle$ CDS

 $\langle 222 \rangle$ (1) . . (411) $\langle 220 \rangle$

<221> mat_peptide

 $\langle 222 \rangle$ (58) . . (411)

<400> 70

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tct ttc tcc cag ctt gtg ctg act caa tgc ccc tct gcc tct gcc tcc	96
Ser Phe Ser Gln Leu Val Leu Thr Gln Ser Pro Ser Ala Ser Ala Ser	
-1 1 5 10	
ctg gga gcc tgc gtc aag ctc acc tgc acc ttg agt agt cag cac agt	144
Leu Gly Ala Ser Val Lys Leu Thr Cys Thr Leu Ser Ser Gln His Ser	
15 20 25	
acg tac acc att gaa tgg tat cag cag cag cca gag aag ggc cct agg	192
Thr Tyr Thr Ile Glu Trp Tyr Gln Gln Gln Pro Glu Lys Gly Pro Arg	
30 35 40 45	
tac gtg atg gat ctt aag caa gat gga agc cac agc aca ggt gat ggg	240
Tyr Val Met Asp Leu Lys Gln Asp Gly Ser His Ser Thr Gly Asp Gly	
50 55 60	
att cct gat cgc ttc tca ggc tcc agc tct ggg gct gag cgc tac ctc	288
Ile Pro Asp Arg Phe Ser Gly Ser Ser Ser Gly Ala Glu Arg Tyr Leu	
65 70 75	
acc atc tcc agc ctc cag tct gag gat gag gct gac tat tac tgt ggt	336
Thr Ile Ser Ser Leu Gln Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Gly	
80 85 90	
gtg ggt gat aca att aag gaa caa ttt gtg tac gtg ttc ggc gga ggg	384
Val Gly Asp Thr Ile Lys Glu Gln Phe Val Tyr Val Phe Gly Gly Gly	
95 100 105	
acc aaa ctg acc gtc cta ggc cag ccc	411
Thr Lys Leu Thr Val Leu Gly Gln Pro	
110 115	

<210> 71

<211> 411

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<213> Homo sapiens

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<222> (58).. (411)

<400> 71

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tct ttc tcc cag ctt gtg ctg act caa tcg ccc tct gcc tct gcc tcc	96
Ser Phe Ser Gln Leu Val Leu Thr Gln Ser Pro Ser Ala Ser Ala Ser	
-1 1 5 10	
ctg gga gcc tcg gtc aag ctc acc tgc acc ttg agt agt cag cac agt	144
Leu Gly Ala Ser Val Lys Leu Thr Cys Thr Leu Ser Ser Gln His Ser	
15 20 25	
acg tac acc att gaa tgg tat cag cag cag cca gag aag ggc cct aag	192
Thr Tyr Thr Ile Glu Trp Tyr Gln Gln Gln Pro Glu Lys Gly Pro Lys	
30 35 40 45	
tac ctg atg gat ctt aag caa gat gga agc cac agc aca ggt gat ggg	240
Tyr Leu Met Asp Leu Lys Gln Asp Gly Ser His Ser Thr Gly Asp Gly	
50 55 60	
att cct gat cgc ttc tca ggc tcc agc tct ggg gct gag cgc tac ctc	288
Ile Pro Asp Arg Phe Ser Gly Ser Ser Ser Gly Ala Glu Arg Tyr Leu	
65 70 75	
acc atc tcc agc ctc cag tct gag gat gag gct gac tat atc tgt ggt	336

Thr Ile Ser Ser Leu Gln Ser Glu Asp Glu Ala Asp Tyr Ile Cys Gly	
80 85 90	
gtg ggt gat aca att aag gaa caa ttt gtg tac gtg ttc ggc gga ggg	384
Val Gly Asp Thr Ile Lys Glu Gln Phe Val Tyr Val Phe Gly Gly Gly	
95 100 105	
acc aaa ctg acc gtc cta ggc cag ccc	411
Thr Lys Leu Thr Val Leu Gly Gln Pro	
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<210> 72
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tct ttc tcc cag ctt gtg ctg act caa tcg ccc tct gcc tct gcc tcc	96
Ser Phe Ser Gln Leu Val Leu Thr Gln Ser Pro Ser Ala Ser Ala Ser	
-1 1 5 10	

ctg gga gcc tgc gtc aag ctc acc tgc acc ttg agt agt cag cac agt	144
Leu Gly Ala Ser Val Lys Leu Thr Cys Thr Leu Ser Ser Gln His Ser	
15 20 25	
acg tac acc att gaa tgg tat cag cag cag cca gag aag ggc cct agg	192
Thr Tyr Thr Ile Glu Trp Tyr Gln Gln Gln Pro Glu Lys Gly Pro Arg	
30 35 40 45	
tac ctg atg gat ctt aag caa gat gga agc cac agc aca ggt gat ggg	240
Tyr Leu Met Asp Leu Lys Gln Asp Gly Ser His Ser Thr Gly Asp Gly	
50 55 60	
att cct gat cgc ttc tca ggc tcc agc tct ggg gct gag cgc tac ctc	288
Ile Pro Asp Arg Phe Ser Gly Ser Ser Ser Gly Ala Glu Arg Tyr Leu	
65 70 75	
acc atc tcc agc ctc cag tct gag gat gag gct gac tat atc tgt ggt	336
Thr Ile Ser Ser Leu Gln Ser Glu Asp Glu Ala Asp Tyr Ile Cys Gly	
80 85 90	
gtg ggt gat aca att aag gaa caa ttt gtg tac gtg ttc ggc gga ggg	384
Val Gly Asp Thr Ile Lys Glu Gln Phe Val Tyr Val Phe Gly Gly Gly	
95 100 105	
acc aaa ctg acc gtc cta ggc cag ccc	411
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<210> 73

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<222> (58).. (411)

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          -15          -10          -5
tct ttc tcc cag ctt gtg ctg act caa tgc ccc tct gcc tct gcc tcc 96
Ser Phe Ser Gln Leu Val Leu Thr Gln Ser Pro Ser Ala Ser Ala Ser
      -1  1          5          10
ctg gga gcc tgc gtc aag ctc acc tgc acc ttg agt agt cag cac agt 144
Leu Gly Ala Ser Val Lys Leu Thr Cys Thr Leu Ser Ser Gln His Ser
      15          20          25
acg tac acc att gaa tgg tat cag cag cag cca gag aag ggc cct aag 192
Thr Tyr Thr Ile Glu Trp Tyr Gln Gln Gln Pro Glu Lys Gly Pro Lys
      30          35          40          45
tac gtg atg gat ctt aag caa gat gga agc cac agc aca ggt gat ggg 240
Tyr Val Met Asp Leu Lys Gln Asp Gly Ser His Ser Thr Gly Asp Gly
          50          55          60
att cct gat cgc ttc tca ggc tcc agc tct ggg gct gag cgc tac ctc 288
Ile Pro Asp Arg Phe Ser Gly Ser Ser Ser Gly Ala Glu Arg Tyr Leu
          65          70          75
acc atc tcc agc ctc cag tct gag gat gag gct gac tat atc tgt ggt 336
Thr Ile Ser Ser Leu Gln Ser Glu Asp Glu Ala Asp Tyr Ile Cys Gly
          80          85          90
gtg ggt gat aca att aag gaa caa ttt gtg tac gtg ttc ggc gga ggg 384
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Val Gly Asp Thr Ile Lys Glu Gln Phe Val Tyr Val Phe Gly Gly Gly	
95	100 105
acc aaa ctg acc gtc cta ggc cag ccc	411
Thr Lys Leu Thr Val Leu Gly Gln Pro	
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tct ttc tcc cag ctt gtg ctg act caa tcg ccc tct gcc tct gcc tcc	96
Ser Phe Ser Gln Leu Val Leu Thr Gln Ser Pro Ser Ala Ser Ala Ser	
-1 1 5 10	
ctg gga gcc tcg gtc aag ctc acc tgc acc ttg agt agt cag cac agt	144
Leu Gly Ala Ser Val Lys Leu Thr Cys Thr Leu Ser Ser Gln His Ser	
15 20 25	

acg tac acc att gaa tgg tat cag cag cag cca gag aag ggc cct agg	192
Thr Tyr Thr Ile Glu Trp Tyr Gln Gln Gln Pro Glu Lys Gly Pro Arg	
30 35 40 45	
tac gtg atg gat ctt aag caa gat gga agc cac agc aca ggt gat ggg	240
Tyr Val Met Asp Leu Lys Gln Asp Gly Ser His Ser Thr Gly Asp Gly	
50 55 60	
att cct gat cgc ttc tca ggc tcc agc tct ggg gct gag cgc tac ctc	288
Ile Pro Asp Arg Phe Ser Gly Ser Ser Ser Gly Ala Glu Arg Tyr Leu	
65 70 75	
acc atc tcc agc ctc cag tct gag gat gag gct gac tat atc tgt ggt	336
Thr Ile Ser Ser Leu Gln Ser Glu Asp Glu Ala Asp Tyr Ile Cys Gly	
80 85 90	
gtg ggt gat aca att aag gaa caa ttt gtg tac gtg ttc ggc gga ggg	384
Val Gly Asp Thr Ile Lys Glu Gln Phe Val Tyr Val Phe Gly Gly Gly	
95 100 105	
acc aaa ctg acc gtc cta ggc cag ccc	411
Thr Lys Leu Thr Val Leu Gly Gln Pro	
110 115	

<210> 75

<211> 34

<212> PRT

<213> Homo sapiens

<400> 75

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20 25 30	

Thr Ala